

**DRAFT FINAL
NO FURTHER ACTION
JUSTIFICATION DOCUMENT**

**ROCKY FLATS PLANT
LOW PRIORITY SITES**

(OPERABLE UNIT NO. 16)

**U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado**

ENVIRONMENTAL RESTORATION PROGRAM

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VOLUME I

ADMIN RECORD

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INDEX

		Page
Section 1	INTRODUCTION	1-1
Section 2	HISTORICAL INFORMATION	2 - 1
Section 3	PROPOSED ACTIONS	3 - 1
RFP Map-IHSS Sites	INSERT	

1.0

INTRODUCTION

This document presents historical information relating to releases in Operable Unit Number 16 (OU 16), Low priority Sites. OU 16 is comprised of IHSSs 185, 192, 193, 194, 195, 196, and 197. The IHSSs located in OU 16 were identified as potential CERCLA sites under the Phase 1 Comprehensive Environmental Assessment and Response Program (CEARP). The goal of this document is to utilize all existing documentation to determine if no further action is warranted.

2.0

HISTORICAL INFORMATION

The following are sections from the Draft Historical Release Report for Rocky Flats Plant, January 1992, Vol 1, the Comprehensive Environmental Assessment and Response Program (CEARP), and Remedial Investigation and Feasibility Study Plans for Low Priority Sites, Vol 1. The information in these reports were used to determine the proposed action in section 3 of this document.

PAC REFERENCE NUMBER: 700-185

IHSS Reference Number: 185

Unit Name: Solvent Spill

Approximate Location: N750,000; E2,084,000

Date(s) of Operation or Occurrence

November 10, 1986^{1,2,3}

Description of Operation or Occurrence

The fork of a forklift punctured a 55-gallon drum of trichloroethane on the southeast dock of Building 707, causing approximately 4 gallons of the solvent to leak onto the ground.^{1,2,3}

Physical/Chemical Description of Constituents Released

The punctured drum contained trichloroethane.^{1,2,3}

Responses to Operation or Occurrence

Four bags of absorbent were used to clean up the spill.^{1,2,3} Material was cleaned up and placed in drums by the Fire Department and taken to Hazardous Storage.³

Fate of Constituents Released to Environment

No documentation was found which detailed the fate of the constituents. This IHSS is being studied in accordance with the IAG schedule for OU16, Low Priority Sites. The Final No Further Action Justification Document for OU16 is to be completed by July 30, 1992.

Comments

None.

References

¹ 1500856

² 1501053

³ 1501825



PAC REFERENCE NUMBER: 000-192

IHSS Reference Number: 192

Unit Name: Antifreeze Discharge

Approximate Location: N749,500; E2,084,000 - Building 708 floor drain to Pond B-1 via storm runoff collection system and South Walnut Creek.

Date(s) of Operation or Occurrence

December 2^{1,2} or 3,³ 1980

Description of Operation or Occurrence

Approximately 155 gallons of antifreeze solution was discharged from a chiller unit into a floor drain in Building 708.^{1,2,3} This floor drain discharges into a storm runoff collection system, which is composed of a buried culvert south of the building and runs eastward from Building 708 under the Building 750 parking lot and terminates at an open culvert just east of Tenth Street.¹ The storm runoff collection system discharges from the culvert into South Walnut Creek. The flow was contained by diversion into Pond B-1.^{1,2}

Physical/Chemical Description of Constituents Released

The antifreeze solution contained 25 percent ethylene glycol in water.^{1,2,3}

Responses to Operation or Occurrence

The flow was contained by diverting the storm water discharge into retention Pond B-1. Pond B-5 dam was closed and there was no off-site discharge of the liquid.^{1,2} Follow-up samples were collected and analyzed from several locations. Based on visual observations of color and flow, it is believed that all of the spill was contained in Pond B-1.^{1,2} Follow-up activities included flushing 5,000 gallons of water through the system into Pond B-1.¹ A report was prepared by Utilities personnel.²

Fate of Constituents Released to Environment

No direct documentation was found which detailed the fate of the ethylene glycol discharged to the environment. This IHSS is being studied in accordance with the IAG schedule for OU16. However, the information developed on this unit for this study indicates that the IHSS location presented in the IAG is inaccurate (see Comments). The Final No Further Action Justification Document for OU16 is to be completed by July 30, 1992.

Comments

HRR information indicates that the Building 708 floor drains discharge into a buried culvert south of the building. The delineation of this IHSS site boundary should start at the south side of Building 708 not at Building 709. It is proposed that new boundaries be defined for this IHSS.

References

¹ 1501200

² 1600230

³ 1501793

PAC REFERENCE NUMBER: 400-193

IHSS Reference Number: 193

Unit Name: Steam Condensate Leak

Approximate Location: N749,100; E2,082,250

Date(s) of Operation or Occurrence

During the week ending November 30, 1979¹

Description of Operation or Occurrence

A steam condensate line located between Building 443 and a valve pit north of a gasoline storage tank was found to be leaking.¹ The area between Building 443 and the valve pit is paved.²

Physical/Chemical Description of Constituents Released

The steam condensate was found to contain 0.135 milligrams/liter amines.¹

Responses to Operation or Occurrence

The line was abandoned and rerouted by November 30, 1979.¹

Fate of Constituents Released to Environment

No documentation was found that detailed that fate of constituents released to the environment.

This IHSS is being studied in accordance with the IAG schedule for OU16. The IAG activities will include site investigations and characterizations. The Final No Further Action Justification Documented will be completed by July 30, 1992.

Comments

None.

References

¹ 1501224

² Blaha, F.J., "Solid Waste Management Unit Descriptions." March 23, 1990.

PAC REFERENCE NUMBER: 700-194

IHSS Reference Number: 194

Unit Name: Steam Condensate Leak - 700 Area

Approximate Location: N750,000; E2,084,000

Date(s) of Operation or Occurrence

September 26, 1979^{1,2,3}

Description of Operation or Occurrence

A steam condensate line break occurred in the Building 707 area. The water from the line break flowed into the surface water drainage through Pond B-4 to Walnut Creek (PAC NE-142.5 - NE-142.9).^{1,2,3}

Physical/Chemical Description of Constituents Released

The steam condensate contained tritium at approximately 1,000 pCi/l.^{1,2,3}

Responses to Operation or Occurrence

On September 27, surface water drainage was diverted to Pond B-1 and the valve to Pond B-5 was closed.^{1,2,3}

Fate of Constituents Released to Environment

Water samples from Pond B-4 ranged from less than or equal to 524 to approximately 926 pCi/l for tritium. Samples from Walnut Creek at Indiana showed 1,163 pCi/l for a 24 hour composite covering September 26, 1979 and approximately 700 pCi/l in a grab sample taken on September 27, 1979.^{1,2}

This IHSS is being studied in accordance with the IAC schedule for OU16, Low Priority Sites. The Final No Further Action Justification Document for OU16 is to be completed by July 30, 1992.

Comments

None.

References

¹1501006

²1501225

³1600219

PAC REFERENCE NUMBER: NW-195

IHSS Reference Number: 195

Unit Name: Nickel Carbonyl Disposal

Approximate Location: N754,500; E2,083,000 (see Comments)

Date(s) of Operation or Occurrence

March 1972 - September 1972

Description of Operation or Occurrence

From March through September 1972, approximately 185 pounds of nickel carbonyl stored in the toxic gas storage building were decomposed in a drywell in the buffer zone.¹ References state conflicting information as to the well's dimensions. The drywell was either 3 feet in diameter and 15 feet deep,¹ 4 feet in diameter and about 20 feet deep,² or 2 feet in diameter and 15 feet deep.³ The valves of the cylinders of nickel carbonyl were opened to vent the cylinders and the cylinders lowered into the well with rope. The cylinders were later retrieved, vented with small arms fire, and placed in the landfill.

Physical/Chemical Description of Constituents Released

Nickel carbonyl vapors are denser than air. Consequently, the vapors collected and decomposed in the bottom of the well. They ignite spontaneously and ignition occurred either immediately after release into the well or sometime after collection at the bottom of the well.¹

Responses to Operation or Occurrence

After 24 hours of placement in the well, the cylinders were removed from the hole, vented by small arms fire, and buried in the Present Landfill (PAC NW-114). Two cylinders became stuck in the hole and were buried in place.² Samples from the lip of the well taken after the initial disposal indicated nickel carbonyl concentrations of approximately 10 parts per million being released during disposal.¹ It is believed that the samples were taken from the air and not soil, but this could not be confirmed.

Fate of Constituents Released to Environment

This IHSS is being studied in accordance with the IAG schedule for Operable Unit 16. However, the information developed for this study indicates that the IHSS location presented in the IAG is inaccurate. HRR information indicates that the release location is marked with a stake in the field and differs from the location indicated on the IAG IHSS map. The Final No Further Action Justification Document for Operable Unit 16 is scheduled to be completed by July 30, 1992.

Comments

According to RFP employees involved with the operation, the location of the well was along the road leading north from the landfill.^{4,5} This road is no longer in existence and is not easily identified. The well was reportedly marked with a six-foot high fence post; however, the post could not be located during site visits conducted December 3 and 9, 1991.⁶ It could not be recalled whether the drywell was to the east or the west of the road. This location differs from the location indicated on the IAG map which places it along the firebreak road northeast of where the road north of the landfill intersects the firebreak road.

The nickel carbonyl destruction site had been placed on the IAG map based on a review of a map and an aerial photograph in 1989 by an employee involved in the operation. Upon further discussion with employees involved with the operation and several site visits, it is now believed that the location indicated on the IAG map is in error. Efforts to locate the marker in the field were unsuccessful and therefore this PAC cannot be placed on a map with any conviction.⁶ The location indicated on the IAG map could not be verified and is strongly believed to be false and misleading.

References

¹ 1500914

² 1500743

³ 1500506

⁴ Personal Communication, Hill, J.E., Retired RFP Employee, December 2, 1991.

⁵ Personal Communication, Hobbs, F. RFP Employee, December 3, 1991.

⁶ Site visits, December 3 and 9, 1991.

Other References of Interest

1500507

1500508

1500510

PAC REFERENCE NUMBER: 100-196

IHSS Number: 196

Unit Name: Water Treatment Plant Backwash Pond

Location: N748,500; E2,081,500 (south side of Building 124)¹

Date(s) of Operation or Occurrence

Early 1970s - late 1970s¹

Description of Operation or Occurrence

Persons interviewed for the CEARP Phase 1 document indicated that backwash from the raw water treatment plant (Building 124) was collected in the early 1970s in an unlined pond on the south side of the building.¹

Physical/Chemical Description of Constituents Released

The backwash would have contained flocculants (aluminum sulfate and lime), residual chlorine, and suspended solids.¹

Responses to Operation or Occurrence

No documentation was found which detailed responses to this occurrence.

Fate of Constituents Released to Environment

The pond reportedly dried up and was destroyed in the late 1970s when the new canal system that reroutes surface water around RFP was constructed. The area is now paved.¹ This IHSS is being investigated in accordance with the IAG schedule for Operable Unit No. 16. The No Further Action Justification document for Operable Unit No. 16 is to be completed by July 30, 1992.

Comments

According to information in the CEARP Phase 1 document, this unit existed in the 1970s on the south side of Building 124. However, the backwash pond does not appear to exist at this location on aerial photos from 1969,^{2,3} 1971⁴ or 1978.⁵ No other prospective locations for this pond were identified in aerial photographs. Because of anonymity of CEARP interviewees, the basis of the CEARP identification cannot be verified. The relationship between the surface water canal system referenced in the CEARP document and this unit is not clear.

References

¹ 1501999

² RFP Photograph, Negative 13676-08, June 5, 1969.

³ RFP Photograph, Negative 13677-10, June 5, 1969.

⁴ EPA Aerial Photograph, Frame VCUC 2-88, August 6, 1971.

⁵ EPA Aerial Photograph, Frame VEQC-C-3-179, August 17, 1978.

PAC REFERENCE NUMBER: 500-197

IHSS Reference Number: 197

Unit Name: Scrap Metal Sites - 500 Area

Approximate Location: N750,000; E2,083,000

Date(s) of Operation or Occurrence

Approximately 1958^{1,2} - Early 1960s³

Description of Operation or Occurrence

In approximately 1958, scrap metal components, mostly from the original plant construction program, were buried in trenches west of Building 559. Some of the buried material was recovered from process areas.^{1,2,4} Another source states that the burial probably occurred in the early 1960s. The site was probably used by the Austin Company for disposal of construction debris during early building activities.³

Physical/Chemical Description of Constituents Released

Some of the scrap metal material recovered from the process areas and buried in the trenches could possibly have been radioactively contaminated.^{1,2} There is a slight possibility that transformers containing PCBs were disposed of at this site.³

Responses to Operation or Occurrence

In 1981, excavation for the construction of the PSZ unearthed the scrap metal burial sites. The RFP remediated the site by complete excavation of the trenches and removal of the buried material to the sanitary landfill (PAC NW-114).^{4,5,6,7} Another reference states that there was a second scrap metal burial site, located west of Building 559 and northwest of the first site, which was also unearthed at the time of the PSZ construction.³

Fate of Constituents Released to Environment

No radioactive contamination was detected in the material excavated from the scrap metal trenches.^{4,5} This IHSS is being studied in accordance with the IAG schedule for OU16. However, the information developed on this unit for this study indicates that the location of IHSS 197 presented in the IAG is inaccurate. The Final No Further Action Justification Document for OU16 is to be completed by July 30, 1992.

Comments

Information presented in reference 3 indicates that the scrap metal burial site is of a larger extent than shown in the IAG. It is proposed that IHSS 197 be redefined to extend approximately 250 feet farther to the northwest (PAC 500-197).

References

¹ 1500887

² 1601057

³ 1500755

⁴ 1500765

Table V.4. Potential CERCLA Sites Identified During CEARP Phase I
with Possible Nonradioactive Hazardous Chemical Waste or Contamination (con.)

Site	Status	DOE CEARP Phase I				Planned Future Action	
		FFSDIF/PA/PSI ^a Finding	HRS ^b Score	MHRS ^b Score	EPA CERCLA Program Element	DOE	
						CERCLA/CERCLA ^c	Order Phase
Hydrogen Peroxide Spill (400 Area)	Spill	Negative	NA	NA	None	None	None
Multiple Solvent Spills (400 Area)	Spill	Positive	NE	NA	None	Installation Assessment (Phase I, Supplemental)	
Multiple Solvent Spills (700 Area)	Spill	Positive	NE	NA	None	Installation Assessment (Phase I, Supplemental)	
Multiple Solvent Spills (900 Area)	Spill	Positive	NE	NA	None	Installation Assessment (Phase I, Supplemental)	
Antifreeze Discharge (OPS)	Discharge	Negative	NA	NA	None	None	None
Steam Condensate Leak (400 Area)	Leak	Negative	NA	NA	None	None	None
Steam Condensate Leak (700 Area)	Leak	Negative	NA	NA	None	None	None
Nickel Carbonyl Disposal (OPS)	Inactive/ Covered	Negative	NA	NA	None	None	None
Water Treatment Plant Backwash Pond (100 Area)	Inactive	Negative	NA	NA	None	None	None
Scrap Metal Sites (2) (500 Area)	Removed	Negative	NE	NA	None	None	None

Table V.4. Potential CERCLA Sites Identified During CEARP Phase I
with Possible Nonradioactive Hazardous Chemical Waste or Contamination (con.)

Site	Status	DOE CEARP Phase I			Planned Future Action	
		FFSD: F/PA/PSI ^a	HRS ^b	MHS ^b	DOE	
		Findings	Score	Score	CEARP/CERCLA ^c	Order Phase
VOCs in Groundwater	Leak	Positive	40	NA	Remedial Investigation	Confirmation (Phase II)

-
- ^a Federal Facility Site Discovery and Identification Findings/Preliminary Assessments/Preliminary Site Inspections
^b EPA Hazard Ranking System/DOE Modified Hazard Ranking System
^c Comprehensive Environmental Assessment and Response Program/Comprehensive Environmental Response, Compensation, and Liability Act
^d Not Evaluated
^e Not Applicable

CERCLA Finding - Negative for FFSDIF, PA, and PSI; therefore, a HRS Migration Mode Score is not calculated.

Planned Future Action - No further action is warranted.

V.A.4.u. Hydrogen Peroxide Spill, 400 Area. In April 1981, a 55-gal drum of hydrogen peroxide was dropped at the corner of 5th Street and Central Avenue. The drum ruptured, and the liquid was contained in a hole dug at this location. The hole was subsequently covered (PC 1985b). This spill would have been neutralized by the buffering action of the soil. No environmental hazard should remain.

CERCLA Finding - Negative for FFSDIF, PA, and PSI; therefore, a HRS Migration Mode Score is not calculated.

Planned Future Action - No further action is warranted.

V.A.4.v. Multiple Solvent Spills, 400 Area. Persons interviewed mentioned that prior to 1979 both the southwest and west side of Building 444 were used for nonradioactive solvent storage. Because of minor leaks and spills, these locations may contain low levels of hydrocarbons. It is not known if solvents remain in the soil at this site.

CERCLA Finding - Positive for FFSDIF, PA, and PSI; however, there is not sufficient information to calculate a HRS Migration Mode Score.

Planned Future Action - A CEARP Phase I reconnaissance field study will be conducted to determine the presence or absence of hazardous substances and the potential for migration into various environmental pathways. Based on the results of this study, appropriate action will be taken.

V.A.4.w. Multiple Solvent Spills, 700 Area. Carbon tetrachloride tanks are located within diked areas north and south of Building 776 and north of the Building 776 compressor house. These tanks overflowed during the 1970s, and small leaks and spills occurred during tank filling operations. In addition, one of these tanks ruptured in June 1981. The solvent drained into a sump, which pumped some of the liquid onto the ground surface (PC 1985b).

Persons interviewed mentioned that 100 to 200 gal of trichloroethylene was spilled (prior to 1970) at the north side of Building 776. They did not recall any mitigation measures. This spill may have been carbon tetrachloride (PC 1985a). It is not known whether solvents remain in the environment at these sites.

CERCLA Finding - Positive for FFSDIF, PA, and PSI; however, there is not sufficient information to calculate a HRS Migration Mode Score.

Planned Future Action - A CEARP Phase I reconnaissance field study will be conducted to determine the presence or absence of hazardous substances and the potential for migration into various environmental pathways. Based on the results of this study, appropriate action will be taken.

V.A.4.x. Multiple Solvent Spills, 900 Area. Locations along the perimeter road south of the old East Guard Gate (Gate 9) were used as solvent storage areas. Persons interviewed mentioned that there may have been minor leaks or spills. This road also had used motor oil put on it for dust control. It is not known if solvents or oil residuals remain in the soil at this site.

CERCLA Finding - Positive for FFSDIF, PA, and PSI; however, there is not sufficient information to calculate a HRS Migration Mode Score.

Planned Future Action - A CEARP Phase I reconnaissance field study will be conducted to determine the presence or absence of hazardous substances and the potential for migration into various environmental pathways. Based on the results of this study, appropriate action will be taken.

V.A.4.y. Antifreeze Discharge, Original Plant Site Outside the Security-Fenced Area. In December 1980, approximately 155 gal of 25% ethylene glycol (antifreeze) was released from a chiller unit into a floor drain in Building 708. The flow was contained by diverting the storm water system discharge into retention pond B-1 (PC 1985c). The ethylene glycol introduced into the environment from this spill would no longer be detectable. No environmental hazard should remain.

CERCLA Finding - Negative for FFSDIF, PA, and PSI; therefore, a HRS Migration Mode Score is not calculated.

Planned Future Action - The retention ponds will be examined under CEARP Phase II (Sec.V.A.3.i). No further action is warranted.

V.A.4.z. Steam Condensate Leak, 400 Area In November 1979, a steam condensate line between Building 443 and a valve pit north of the gasoline storage tank leaked. Water analyses indicated a low concentration (0.135 ppm) of amines. This line was taken out of service and the condensate was rerouted through a different system (PC 1985b). The amines introduced into the environment from this leak would no longer be detectable. No environmental hazard should remain.

CERCLA Finding - Negative for FFSDIF, PA, and PSI; therefore, a HRS Migration Mode Score is not calculated.

Planned Future Action - No further action is warranted.

V.A.4.aa. Steam Condensate Leak, 700 Area In September 1979, a steam condensate line broke near Building 707 and water from this line flowed through pond B-4 into Walnut Creek. This leak did not present any environmental hazard.

CERCLA Finding - Negative for FFSDIF, PA, and PSI; therefore, a HRS Migration Mode Score is not calculated.

Planned Future Action - No further action is warranted.

V.A.4.bb. Nickel Carbonyl Disposal, Original Plant Site Outside the Security-Fenced Area Persons interviewed mentioned that several bottles of nickel carbonyl were destroyed in a hole drilled onsite south of Lindsay Ranch. The valves were cracked open and the cylinders were lowered into the hole by ropes. After 24 hrs the cylinders were removed, vented by small arms fire, and buried in the present onsite landfill. Two cylinders got stuck in the hole and were buried in place. Nickel carbonyl is highly volatile, and venting these cylinders in this hole would not result in an environmental hazard. No environmental hazard should remain.

CERCLA Finding - Negative for FFSDIF, PA, and PSI; therefore, a HRS Migration Mode Score is not calculated.

Planned Future Action - No further action is warranted.

V.A.4.cc. Water Treatment Plant Backwash Pond, 100 Area. Persons interviewed mentioned that during the early 1970s, backwash from the raw water treatment plant (Building 124) was collected in a pond on the south side of the building. This water would have contained flocculates (aluminum sulfate and lime), residual chlorine, and suspended solids. They said the pond dried up and was destroyed in the late 1970s when the new canal system that reroutes surface water around the plant site was constructed. The materials introduced into the environment from this pond would not pose an environmental hazard.

CERCLA Finding - Negative for FFSDIF, PA, and PSI; therefore, a HRS Migration Mode Score is not calculated.

Planned Future Action - No further action is warranted.

V.A.4.dd. Scrap Metal Sites, 500 Area. People said during the interviews that two scrap metal disposal sites (nonradioactive, nonhazardous, nonprecious metals) southwest of Building 559 were removed in the early 1980s when the personnel security zone (PSZ) was constructed. They also said that one of these sites may have received some old transformers that contained PCBs. However, no transformers were found during the excavation (PC 1985c). No environmental hazard should remain.

The residue from these sites was monitored for radioactivity, found clean, and disposed of in the present onsite landfill.

CERCLA Finding - Negative for FFSDIF, PA, and PSI; therefore, a HRS Migration Mode Score is not calculated.

Planned Future Action - No further action is warranted.

V.A.4.ee. VOCs in Groundwater. Rocky Flats Plant conducted a preliminary screening of the plant's drinking water, surface water, and groundwater in March and April 1985, for volatile organic compounds (VOCs). Results of these analyses indicated that no VOCs were present in the drinking or surface water at the plant. However, these preliminary data do indicate the presence of VOCs in the groundwater: trichloroethylene 6,400 ppb; tetrachloroethylene 16,000 ppb; 1,1-dichloroethylene 1,300 ppb; and 1,1,1-trichloroethane 4,800 ppb (Setlock 1985b).

3.32 SWMU 185: SOLVENT SPILL

3.32.1 Site History and Operation

A five-gallon spill of 1,1,1-trichloroethane resulted when a fork-lift punctured a 55-gallon drum at the southeast loading dock of Building 707 on November 10, 1986. The Rocky Flats Fire Department was notified and the three-inch gash was sealed. The drum was placed in an overpack drum and sent to Rocky Flats' Hazardous Waste Group for disposal.

Oil Dry, a commercial absorbent, was used to clean up the spill. The absorbent was placed in a waste drum for disposal at an approved off-site facility.

3.32.2 Geographic Information

SWMU 185 is a 30- by 60-foot area at the southeast loading dock of Building 707, within the Perimeter Security Zone (Figure 3-2). The area is paved and includes a drain into the plant storm sewer system which discharges to North Walnut Creek.

The SWMU is on the Rocky Flats Alluvium, about 8 feet above the water table.

3.32.3 Site-Specific Pathways

Since the loading dock area was paved at the time of the spill, the pathway for contaminant migration would be into the storm sewer system and into the surface water. Since the spill was small and was cleaned up promptly and properly, it is unlikely that any of the 1,1,1 trichloroethane entered the surface water.

3.32.4 Recommended Further Action

Since the spill was cleaned up immediately and the punctured drum and absorbent material disposed of properly, it is recommended that no further studies be made of SWMU 185.

3.38 SWMU 192: ANTIFREEZE DISCHARGE

3.38.1 Site History and Description

In December 1980, approximately 155 gallons of 25% ethylene glycol (antifreeze) was released from a chiller unit into a floor drain in Building 708. The flow was contained by diverting the storm water system discharge into retention pond B-1 (PC 1985c).

The CERCLA findings are negative for the FFSDIF, the PA and the PSI. Ethylene glycol is easily degraded in the environment and in this quantity presents no hazard.

3.38.2 Geographic Information

The discharged antifreeze was contained in the B-1 retention pond. This pond is located east of the Rocky Flats Plant production area. The pond was constructed on the South Walnut Creek drainage and is unlined. This pond is under investigation (SWMU 142).

3.38.3 Site Specific Pathways

Pathways out of the B-1 pond are primarily limited to the surface water and groundwater. Evaporation is of minor importance.

Water from Pond B-1 is discharged to ponds B-4 and B-5. Water is then discharged into South Walnut Creek from pond B-5 in accordance with NPDES requirements.

The amount of infiltration into the underlying stream, valley colluvium aquifer is unknown. However, it is certain that some migration occurs.

3.38.4 Recommended Further Action

The ethylene glycol introduced into the environment from this spill would easily be degraded in the environment to non-hazardous by-products. No environmental hazard should remain.

3.39 SWMU 193: STEAM CONDENSATE LEAK - 400 AREA

3.39.1 Site History and Description

In November 1979, a steam condensate line between Building 443 and a valve pit north of the gasoline storage tank leaked. Water analyses indicated a low concentration (0.135 ppm) of amines. This line was taken out of service and the condensate was rerouted through a different system (PC 1985b).

CEARP Phase I indicates negative findings for the FFSDIF, PA and PSI of this SWMU. There is no evidence of a hazardous release.

3.39.2 Geographic Information

The steam condensate line between Building 443 and the valve pit are situated on a relatively flat portion of the Plant Site. The area between Building 443 and the valve pit is paved.

The nearest surface water is Woman Creek located approximately 1,200 feet to the south.

The Rocky Flats Alluvium underlies this area. Depth to groundwater is approximately 9 feet.

3.39.3 Site Specific Pathways

No pathways are of concern since there is no evidence of a hazardous release.

3.39.4 Recommended Further Action

The amines introduced into the environment from this leak would no longer be detectable and no environmental hazard should remain. No further action is warranted.

3.40 SWUM 194: STEAM CONDENSATE LEAK - 700 AREA

3.40.1 Site History and Description

In September 1979, a steam condensate line broke near Building 707 and water from this line flowed through pond B-4 into Walnut Creek.

The CERCLA findings for the FFSDIF, PA, and PSI were all negative.

3.40.2 Geographic Information

Building 707 is located within the Perimeter Security Zone (PSZ), in approximately the middle of the Plant site. The area is paved with the nearest surface water being South Walnut Creek and the B-Series retention ponds.

The B-4 retention pond is located east of the main Plant site on South Walnut Creek.

3.40.3 Site Specific Pathways

No pathway is of concern since there is no evidence of a hazardous release.

3.40.4 Recommended Further Action

This leak did not present any environmental hazard. Therefore, no further action is warranted.

3.41 SWMU 195: NICKEL CARBONYL DISPOSAL

3.41.1 Site History and Description

Personnel interviews suggested that several cylinders of nickel carbonyl were destroyed in a hole drilled onsite south of Lindsay Ranch. The valves were opened and the cylinders were lowered into the hole by ropes. After 24 hours, the cylinders were removed, punctured by small arms fire, and buried in the present onsite landfill. Two cylinders were wedged in the hole and were buried in place, presumably empty.

The CEARP Phase 1 investigation indicated that CERCLA findings were negative for the FFSDIF, PA, and PSI. A Hazardous Ranking Migration Mode Score was not calculated.

3.41.2 Geographic Information

The exact location of the borehole in which the nickel carbonyl bottles were buried is unknown. Lindsay Ranch is located approximately northeast of the Plant production area. This area is characterized by broad open fields used primarily for agriculture.

3.41.3 Site Specific Pathways

Nickel carbonyl is highly volatile, and the venting of these cylinders allowed the substance to dissipate into the atmosphere. It is no longer detectable.

3.41.4 Recommended Further Action

Nickel carbonyl is highly volatile and venting these cylinders in the borehole would not result in a long term environmental hazard. No further action is recommended.

3.42 SWMU 196: Water Treatment Plant
Backwash Pond - 100 Area

3.42.1 Site History and Description

Personnel interviewed in CEARP Phase I stated that during the early 1970s, backwash from the raw water treatment plant (Building 124) was collected in a pond on the south side of the building. This water would have contained flocculates (aluminum sulfate and lime), residual chlorine, and suspended solids. Reportedly, the pond dried up and was destroyed in the late 1970's when the new canal system that reroutes surface water around the plant site was constructed.

CERCLA findings were negative for the Federal Facility Site Discovery and Identification Findings (FFSDIF), the Preliminary Assessment (PA), and the Preliminary Site Investigation (PSI).

3.42.2 Geographic Information

Backwash from the raw water treatment plant was held in an unlined pond on the south side of Building 124, which is located on the southwestern portion of the Plant site.

This area is approximately 1,100 feet north of the Woman Creek drainage. The area is nearly flat and most surface water runoff would be directed easterly.

Rocky Flats Alluvium underlies this area, with a water table 6 to 9 feet below the surface. Monitor well 44-86 is located approximately 1,100 feet to the northeast.

3.42.3 Site Specific Pathways

This area is now paved and there is no wind affect to the past deposits. Therefore wind transportation of contaminants is negligible.

Any surface water runoff would be towards the east. Being paved and basically sealed from the atmosphere, there is little chance for surface water influence.

Rocky Flats Alluvium underlies this area approximately 6 to 9 feet based on upgradient and downgradient monitor wells. The materials introduced into the environment would not pose an environmental hazard. Therefore, it is doubtful if any environmental damage has occurred to the shallow groundwater aquifer.

3.42.4 Recommended Further Action

No further action is necessary.

3.43 SWMU 197: SCRAP METAL SITES - 500 AREA

3.43.1 Site History and Description

During the CEARP Phase I interviews, it was stated that two scrap metal disposal sites (nonradioactive, nonhazardous, nonprecious metals) southwest of Building 559 were removed in the early 1980's when the personnel security zone (PSZ) was constructed. It was further stated that one of these sites may have received used transformers that contained PCBs. However, no transformers were found during the excavation (PC 1985c).

The residue from these sites was monitored to determine the presence of radioactivity and was found to be clean. Though nonradioactive, the residue was placed in the present landfill.

The PA, PSI and FFSDIF CERCLA findings were all negative for this site. No hazardous ranking score was calculated.

3.43.2 Geographic Information

The area of concern lies southwest of Building 559, in the central portion of the Plant site. This area is nearly flat with no surface water identified in the vicinity. North Walnut Creek, located 1,500 feet to the north, is the nearest surface water feature.

Approximately 750 feet to the west of Building 559 are two monitor wells (23-86 and 24-86). One well is screened in the shallow Rocky Flats Alluvium, and the other is a bedrock monitor well. The water table in the shallow monitor well (24-86) is approximately eight feet. It is estimated that the water table under the historic scrap metal sites varies between 7 and 9 feet.

3.43.3 Site Specific Pathways

According to CEARP Phase I the area southwest of Building 559 was cleaned up and the residue placed of in the present landfill. No transformers were found during the excavation, which results in some doubt about the accuracy of the testimony.

If indeed, transformers were stored in this area historically, the major pathway would be that of direct contact and via groundwater migration.

3.43.4 Recommended Further Action

It is doubtful that transformers were stored at this site. No transformers were uncovered during excavation activities, nor was any leakage occurring from transformers reported. All CERCLA findings were negative, however it is recommended that soil samples be taken to confirm CEARP Phase I information.

3.0

PROPOSED ACTIONS

IHSS 185

This IHSS is located at the Southeast loading dock of building 707. Five gallons of 1,1,1-trichloroethane leaked from a 55 gallon drum at the loading dock of this building. An absorbant was used to clean up the spill. The spill was in a paved area which drains to a storm sewer that flows to walnut creek. Since there was adequate information to conclude that the clean-up was performed properly, it is recommended that no further be taken for this IHSS.

IHSS 192

This IHSS is located at building 708. One hundred fifty five gallons of antifreeze was released onto the floor of this building. The spill flowed from the building drain which was then contained by diverting the flow into pond B-1. Since antifreeze readily degrades and pond B-1 is under investigation in IHSS 142, no further action would be necessary for this IHSS.

IHSS 193

This IHSS is the steam condensate line between Building 443 and a valve pit north of the gasoline storage pit. The water contained 0.135 ppm of amines. Since there is no evidence of a hazardous release, this IHSS should be removed from further investigation.

IHSS 194

This IHSS is the broken steam condensate line near Building 707. Water from this line flowed through pond B-4 and into Walnut Creek. The steam condensate contained 1000 pCi/l of tritium. Water samples from pond B-4 and Walnut Creek indicated the presence of tritium (see reference no. 700-194 of the HRR in section 3). The historical data presented in this document indicate that further investigation is required. It is recommended that this IHSS be included in an OU that is or will undergo an RFI/RI.

IHSS 195

This IHSS is located northeast of the plant in the buffer zone. Cylinders containing nickel carbonyl were vented and stored temporarily in a dry well. The gas was ignited sometime during the storage in the well. Sometime after storage in the well, samples were taken and concentrations of 10 ppm were detected. It is believed that these were air samples. Information from historical records indicate inaccurate information regarding the location of this IHSS. Further investigation is warranted of this IHSS and it is recommended that this IHSS be included in a existing OU.

IHSS 196

This IHSS is a former Water treatment Plant backwash pond (unlined). The constituents of this water are aluminum sulfate, lime, residual chlorine and suspended solids. Although the exact location of this pond cannot be verified, the lack of environmental hazards of the constituents in this water do not warrant further investigation.

IHSS 197

This IHSS is the scrap metal site located in the trenches west of building 559. Although it was suggested that the metal was radioactive and that PCB transformers were buried there, no evidence of PCBs were found during excavation, and no radioactive contamination was found during excavation of the scrap metal trenches. The information on this IHSS indicate that no further investigation is required.